

I claim:

1. In combination:

2 a container including a normally upper neck having an open  
normally upper end, and a circumferential shoulder about said  
4 neck below said upper end having a normally lower side,

a tamper-evident closure for said container comprising a tamper-  
6 evident cap positioned over said neck including a circumferential  
side wall having normally upper and lower ends, an upper end wall  
8 joined to the upper end of said side wall and closing the upper  
end of the cap, an opening in the lower end of said cap  
10 circumferentially surrounded by the lower end of said side wall,  
and cap retaining means on the lower end of said side wall  
12 engaging the lower side of said shoulder to prevent upward  
removal of said cap from said container neck, and wherein

14 said cap side wall includes a parting region extending  
circumferentially about said side wall between said side wall  
16 ends at which the cap may be parted into a lower cap portion  
which is fixed against upward removal from the container neck and  
18 an upper cap portion which is removable upwardly from the neck to  
provide access to the neck, and junction means joining said cap  
20 portions along said parting region to which a force may be  
applied to part said cap along said region in a manner which  
22 provides a tampering indicator for the container and permits  
upward removal of said upper cap end portion from said container  
24 neck by a legitimate user.

2. The combination of claim 1 wherein:

- 2 said container neck has external screw threads between said  
shoulder and said upper neck end, and
- 4 said closure includes internal screw threads within said upper  
cap portion engaging said container threads, and sealing means
- 6 within said upper cap portion sealing the open upper end of said  
container neck.

3. The combination of claim 1 wherein:

- 2 said cap comprises an outer cap, and
- said combination includes an inner cap within said outer cap
- 4 removably secured to said container neck and sealing the open  
upper end of said container neck.

4. The combination of claim 1 wherein:

- 2 said cap retaining means are flexible in a manner which permits  
placement of said cap over said container neck but prevents
- 4 upward removal of the cap from the container neck.

5. The combination of claim 1 wherein:

2 said cap comprises an outer cap,

4 said combination includes an inner cap within said outer cap  
threaded on said container neck and sealing the open upper end of  
said container neck, and

6 said inner cap engages said outer cap for rotation of said inner  
cap by rotation of said outer cap.

6. The combination of claim 1 wherein:

2 said container neck has external screw threads between said  
shoulder and said upper neck end,

4 said cap side wall includes a rupture line which extends  
circumferentially about the cap side wall between said cap  
6 portions,

8 said closure includes means providing internal screw threads  
within said upper cap portion engaging said container threads,  
whereby rotation of said cap in one direction relative to said  
10 container with said cap retaining means in contact with said  
container shoulder urges said upper cap portion upwardly relative  
12 to said lower cap portion and thereby stresses said rupture line.  
and

14 said cap is capable of being ruptured along said rupture line by  
said stress.

7. The combination of claim 1 wherein:

2 said container neck has external screw threads between said  
shoulder and said upper neck end,

4 said cap comprises an outer cap,

6 said combination includes an inner cap within said outer cap  
threaded on and sealing the open upper end of said container neck  
and engaging said upper portion of said outer cap for rotation of  
8 said inner cap by said outer cap.

10 said outer cap comprises a rupture line which extends  
circumferentially about the outer cap side wall between said  
upper and lower portions of said outer cap,

12 rotation of said inner cap by said outer cap in a direction to  
unscrew said inner cap from the container with said cap retaining  
14 means in contact with said container shoulder urges said upper  
portion of said outer cap upwardly relative to said lower portion  
16 of said outer cap and thereby stresses said rupture line, and

18 said outer cap is capable of being ruptured along said rupture  
line by said stress.

8. The combination of claim 1 wherein:

2 said junction means comprises a tear strip.

9. The combination of claim 1 wherein:

2 said cap retaining means comprise upwardly angled flexible  
fingers spaced circumferentially about the lower end of said cap  
4 side wall and extending inwardly from said cap side wall at an  
oblique angle to the side wall and upwardly toward the upper end  
6 of the cap, and

8 said fingers are flexible upwardly and outwardly toward the cap  
side wall to permit the fingers to pass downwardly over said  
container shoulder during placement of said cap on the container  
10 neck to a position wherein said fingers engage the lower side of  
said shoulder to prevent upward removal of said cap from the  
12 container.

10. The combination of claim 1 wherein:

2 said cap comprises an outer cap,

4 said combination includes an inner cap within and engaging said  
upper portion of said outer cap and threaded on said container  
neck for sealing the open upper end of said neck.

6 said inner cap is rotatable by said outer cap,

said junction means comprises a tear strip,

8 said cap retaining means comprise upwardly angled flexible  
fingers spaced circumferentially about the lower end of said  
10 outer cap side wall and extending inwardly from said cap side  
wall at an oblique angle to the side wall and upwardly toward the  
12 upper end of the cap, and

said fingers are flexible upwardly and outwardly toward the cap  
14 side wall in a manner which permits the fingers to pass  
downwardly over said container shoulder during placement of said  
16 outer cap on the container neck to a position wherein said  
fingers engage the lower side of said shoulder to prevent upward  
18 removal of the of the outer cap from said container neck.

11. The combination of claim 10 wherein:

2 rotation of said inner cap by said outer cap in a direction to  
unscrew said inner cap from said container with said cap  
4 retaining fingers in contact with said container shoulder urges  
said upper portion of said outer cap upwardly relative to said  
6 lower portion of said outer cap and thereby stresses said parting  
region, and

8 said junction means further comprises a rupture line which  
extends circumferentially about the cap side wall at said parting  
10 region, and is capable of being ruptured by said stress.

12. A tamper-evident closure for a container including a normally  
2 upper neck having an open normally upper end, and a  
circumferential shoulder about said neck below said upper end  
4 having a normally lower side, said closure comprising:

6 a cap to be positioned over said container neck including a  
circumferential side wall having normally upper and lower ends,  
an upper end wall joined to the upper end of said side wall and  
8 closing the upper end of the cap, an opening in the lower end of  
said cap circumferentially surrounded by the lower end of said  
10 side wall, and cap retaining means on the lower end of said side  
wall engagable with the lower side of said shoulder to prevent  
12 upward removal of said cap from said container neck, and wherein

14 said cap side wall includes a parting region extending  
circumferentially about said side wall between said side wall  
ends at which the cap may be parted into upper and lower cap  
16 portions, and junction means joining said cap portions along said  
parting region to which a force may be applied to part said cap  
18 along said region.

13. The tamper-evident closure of claim 12 wherein:

2 said container includes external screw threads between said  
shoulder and the upper end of said container neck, and

4 said closure includes internal screw threads within said upper  
cap portion for engaging said container threads, and sealing  
6 means within said upper cap portion for sealing the open upper  
end of said container neck.

14. The tamper-evident closure of claim 12 wherein:

2 said cap comprises an outer cap, and

4 said closure includes an inner cap within said outer cap to be  
removably secured to said container neck for sealing the open  
upper end of the neck.

15. The tamper-evident closure of claim 12 wherein:

2 said cap retaining means comprise upwardly angled flexible  
fingers which permit placement of said cap over said container  
4 neck but prevent upward removal of the cap from the container  
neck.

16 The tamper-evident closure of claim 12 wherein:



2 said cap comprises an outer cap,

4 said closure includes an inner internally threaded cap within  
said outer cap to be threaded on said container neck for sealing  
the open upper end of the neck, and

6 said inner cap engages said outer cap for rotation of said inner  
cap by rotation of said outer cap.

17. The tamper-evident closure of claim 12 wherein:

2 said container neck has external screw threads between said  
shoulder and said upper neck end,

4 said cap has a rupture line extending circumferentially about  
said cap side wall between said upper and lower cap portions,

6 said closure includes internal screw threads within said upper  
cap portion for engaging said container threads, whereby when

8 said cap is mounted on said container neck with said cap  
retaining means in contact with said container shoulder, rotation  
10 of said cap in one direction urges said upper cap portion  
upwardly relative to said lower cap portion and thereby stresses  
12 said rupture line, and

14 said cap is capable of being ruptured along said rupture line by  
said stress.

18. The tamper-evident closure of claim 12 wherein:

2 said container neck has external screw threads between said  
shoulder and said upper neck end,

4 said cap has a rupture line extending circumferentially about  
said cap side wall between said upper and lower cap portions.

6 said cap comprises an outer cap,

8 said closure comprises an inner cap within said outer cap to be  
threaded on said container neck for sealing the open upper end of  
the neck and engaging said upper portion of said outer cap in  
10 such a way that said inner cap is rotatable by rotation of said  
outer cap, and rotation of said inner cap by said outer cap in a  
12 direction to unscrew the inner cap from the container when said  
closure is mounted on said container neck with said cap retaining  
14 means in contact with said container shoulder urges said upper  
portion of said outer cap upwardly relative to said lower portion  
16 of said outer cap and thereby stresses said rupture line, and

18 said cap is capable of being ruptured along said rupture line by  
said stress.

19. The tamper-evident closure of claim 12 wherein:

2 said junction means comprises a tear strip.

20. The tamper-evident closure of claim 12 wherein:

2 said cap has a rupture line extending circumferentially about  
said cap side wall between said upper and lower cap portions at  
4 which said cap is adapted to be ruptured to separate said cap  
portions by opposing axial forces acting on said cap portions  
6 acting on said cap portions in directions to stress said rupture  
line in tension.

21. The tamper-evident closure of claim 12 wherein:

2 said container neck has external screw threads between said  
shoulder and said upper neck end,

4 said cap comprises an outer cap,

said closure includes an internally threaded inner cap within  
6 said outer cap and adapted to be threaded on said container neck  
for sealing the open upper end of the neck,

8 said junction means comprises a tear strip,

said cap retaining means comprise upwardly angled flexible  
10 fingers spaced circumferentially about the lower end of said  
outer cap side wall and extending inwardly from said cap side  
12 wall at an oblique angle to the side wall and upwardly toward the  
upper end of the cap, and

- 14 said fingers are flexible outwardly to permit the fingers to pass  
downwardly over said container shoulder to a position wherein  
16 said fingers engage the lower side of said shoulder and prevent  
upward removal of the outer cap from said container neck.

22. The tamper-evident closure of claim 21 wherein:

- 2 said outer cap has a rupture line extending circumferentially  
about said outer cap between said upper and lower portions of  
4 said outer cap.  
said inner cap engages said upper portion of said outer cap in  
6 such a way that said inner cap is rotatable by rotation of said  
outer cap, and rotation of said inner cap by said outer cap in a  
8 direction to unscrew the inner cap from the container when said  
closure is mounted on the container neck with said cap retaining  
10 fingers in contact with said container urges said upper portion  
of said outer cap upwardly relative to said lower portion of said  
12 outer cap and thereby stresses said rupture line, and  
said outer cap is capable of being ruptured along said rupture  
14 line by said stress.

23. The combination according to claim 5 wherein:

- 2 said inner cap is fixed within said upper portion of said outer  
cap..

24. The combination according to claim 5 wherein:

- 2 said inner cap is separable from said outer cap, and
- 4 said caps include engageable means limiting upward movement of said inner cap within said outer cap.

25. The closure according to claim 18 wherein:

- 2 said inner cap is fixed within said upper portion of said outer cap.

26. The closure according to claim 18 wherein:

- 2 said inner cap is separable from said outer cap, and
- 4 said caps include engageable means limiting upward movement of said inner cap within said outer cap.

27. The tamper-evident closure of claim 12 wherein:

2 said junction means comprises a tear strip,

4 said cap has a rupture line extending circumferentially about  
said cap side wall between said upper and lower cap portions at  
6 which said cap is adapted to be ruptured to separate said cap  
portions by opposing axial forces acting on said cap portions  
in directions to stress said rupture line in tension,

8 said cap retaining means comprise upwardly angled flexible  
10 fingers spaced circumferentially about the lower end of said  
outer cap side wall and extending inwardly from said cap side  
12 wall at an oblique angle to the side wall and upwardly toward  
the upper end of the cap, and

14 said fingers are flexible outwardly to permit the fingers to  
pass downwardly over said container shoulder to a position  
wherein said fingers engage the lower side of said shoulder and  
16 prevent upward removal of the outer cap from said container  
neck.

28. The tamper-evident closure of claim 5 wherein:

2 said outer cap is configured and adapted for use as a  
drinking vessel.

29. The tamper-evident closure of claim 10 wherein:

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said outer cap is configured and adapted for use as a drinking vessel.

30. The tamper-evident closure of claim 12 wherein:

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said cap is configured and adapted for use as a drinking vessel.

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